## REMARKS

The Application has been carefully reviewed in light of the final Office Action dated (Paper No. 14). Claims 1, 2, 4, 7 to 14, 22, 23, 25, 28 to 34, 42, 43, 45, and 48 to 54 are in the application, of which Claims 1, 22, and 42, the independent claims herein, have been amended. Reconsideration and further examination are respectfully requested.

Claims 1, 2, 4, 7 to 14, 22, 23, 25, 28 to 34, 42 to 43, 45, and 48 to 54 have been rejected under 35 U.S.C. 102(e) over U.S. Patent 5,940,065 (Babb). In response to Applicant's remarks submitted as part of the May 2, 2002 Amendment, the Examiner points to reference nos. 160 to 164 of Figure 7, Figure 6, col. 1, lines 6 to 14, col. 2, lines 1 to 9, col. 4, lines 34 to 47, col. 13, lines 5 to 10 and col. 17, lines 48 to 60.

The present invention generally concerns coordinate correction technology in which coordinate correction parameters for nonlinear conversion are calculated, and addresses the inaccuracies of nonlinear correction of input coordinates in conventional systems.

To address the foregoing problem, the present invention displays a plurality of reference points on a coordinate input means. Using correction parameters calculated based on user-designated coordinates received from a user designation of the reference points displayed on the coordinate input means, it is possible to correct device characteristics of the coordinate input means such as position aberration.

With reference to the specific language of Claim 1, the present invention recites a coordinate correction apparatus that comprises coordinate input means being

placed on a display, display control means for controlling display of a plurality of reference points on the display, the reference points indicating positions for user-designated coordinates on the coordinate input means, coordinates reception means for receiving coordinates designated for the plurality of displayed reference points by user via said coordinate input means, parameter calculation means for calculating coordinates correction parameters for nonlinear conversion, based on the received coordinates, parameter keeping means for keeping the calculated coordinates correction parameters for nonlinear conversion, and coordinates correction means for correcting the coordinates inputted via said coordinates input means by the nonlinear conversion using the coordinates correction parameters kept by the parameter keeping means.

Babb is not seen to teach or to suggest at least the features of the invention defined by independent Claim 1, particularly with respect to the display of a plurality of reference points on the display that indicate position for user-designated coordinates, receipt of coordinates designated for the plurality of reference points by a user, calculation of coordinates correction parameters for nonlinear conversion based on the received coordinates, retention of the calculated coordinates correction parameters for nonlinear conversion, and correction of inputted coordinates by the nonlinear conversion using the retained coordinates correction parameters.

As discussed in Applicant's May 2, 2002 remarks, Babb is seen merely to disclose coordinate correction by detecting touches at various positions of a sensor substrate surface, calculating a mapping coefficient based on touches at various positions of the sensor substrate surface, and executing coordinate correction using the mapping coefficient. Babb et al. is not seen to teach or to suggest that plural reference points are

displayed on a display. Furthermore, Applicant submits that Babb et al. also fails to disclose or suggest that a user touches the displayed reference points resulting in user-designated coordinates. In Babb et al., a user merely touches a predetermined point on a circuit board.

At col. 1, lines 6 to 14 of Babb is seen to describe deriving a mapping relation, or mapping coefficient, (at col. 1, lines 6 to 9) that is then usable to determine a coordinate position of a user's subsequent touch on a touchscreen (col. 1, lines 9 to 14). More particularly, Babb is seen to be determine the mapping relation by detecting touches at various positions of a circuit board. The mapping coefficients calculated as a result can then be used to determine corrected coordinate values of a user's touch of the touch screen. At col. 17, lines 48 to 60, Babb is seen to describe using a computer in place of a microcontroller to determine the mapping coefficients, and col. 13, lines 5 to 10 is seen to describe a using a MathCad software to generate mapping coefficients from the measurements taken from a user touching a circuit board.

Referring to col. 11, lines 45 to 60, Babb indicates that a plastic template with ninety-nine holes designates the predetermined points. The user touches the circuit board at the ninety-nine hole positions indicated by the plastic template using a touch probe connected to a constant current source. Babb is not seen to teach or to suggest displaying reference points on a coordinate input means indicating positions for user-designation of coordinates, which are received and used to calculate coordinate correction parameters for nonlinear conversion.

At col. 2, lines 1 to 9, Babb is seen to describe a lookup table generated using the mapping relation, or coefficients. The lookup table provides a corrected

coordinate pair based on an uncorrected coordinate pair, which acts as an index into the lookup table. Col. 4, lines 34 to 47 of Babb is seen to describe using a lookup table to determine coordinates where the number of detectors is greater in number than the number of coordinates.

Finally, Figures 6 and 7, and reference nos. 160 to 164, are seen to describe the second stage of the two-stage process generally described at col. 1, lines 6 to 14, and discussed above. That is, after the first stage of determining the mapping coefficients, Babb is seen to use the mapping coefficients in the second stage to generate corrected coordinates.

As described beginning at col. 17, line 12, Babb stores digitized voltage sampling derived from corner electrode 160, which are used in box 162 to calculate a product used to identify the quadrant in which the second-stage user input occurred. In other words, once touch 161 (i.e., the second-stage user input) is detected, the products are computed using the stored voltage sampling digitizations to identify a quadrant in which the touch 161 occurred. The mapping relation associated with the identified quadrant is used to calculate the X and Y coordinates.

Thus, Figures 6 and 7, and reference nos. 160 to 164 of Babb are merely seen to describe processing second-stage user input using mapping coefficients generated in the first stage. Figures 6 and 7, and reference nos. 160 to 164 are not seen to describe calculating correction parameters, and certainly are not seen to teach or to suggest calculating coordinate correction parameters by displaying a plurality of reference points that indicate position for user-designated coordinates, receiving coordinates designated for

the plurality of reference points by a user, and calculating coordinates correction parameters for nonlinear conversion based on the received coordinates.

Accordingly, the cited portions of Babb are not seen to teach or to suggest the display on a display of a plurality of reference points that indicate position for user-designated coordinates, receipt of coordinates designated for the plurality of reference points by a user, calculation of coordinates correction parameters for nonlinear conversion based on the received coordinates, retention of the calculated coordinates correction parameters for nonlinear conversion, and correction of inputted coordinates by the nonlinear conversion using the retained coordinates correction parameters.

Therefore, for at least the foregoing reasons, Claim 1 is believed to be in condition for allowance. Further, Applicant submits that Claims 22 and 42 are believed to be in condition for allowance for at least the same reasons.

The remaining pending claims are each dependent from the independent claims discussed above and are therefore believed patentable for the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office by telephone at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Twice Amended) A coordinates correction apparatus comprising:

[a] coordinate input means being placed on a display;

[a] display control means for controlling [the] display of a plurality of reference points on the display, the reference points indicating positions for user-designated coordinates on the coordinate input means;

[a] coordinates reception means for receiving coordinates designated for the plurality of displayed reference points by user via said coordinate input means;

[a] parameter calculation means for calculating coordinates correction parameters for nonlinear conversion, based on the received coordinates;

[a] parameter keeping means for keeping the calculated coordinates correction parameters for nonlinear conversion; and

[a] coordinates correction means for correcting the coordinates inputted via said coordinates input means by the nonlinear conversion using the coordinates correction parameters kept by the parameter keeping means.

22. (Twice Amended) A coordinates correction method for controlling a coordinates correction apparatus which has a coordinate input means placed on a display, the method comprising:

controlling [the] display of a plurality of reference points on the display, the reference points indicating positions for user-designated coordinates on the coordinate input means;

receiving coordinates designated for the plurality of displayed reference points by user via said coordinate input means;

calculating coordinates correction parameters for nonlinear conversion, based on the received coordinates;

keeping the calculated coordinates correction parameters for nonlinear conversion; and

correcting the coordinates inputted in the coordinate input step by the nonlinear conversion using the kept coordinates correction parameters.

42. (Twice Amended) A computer readable memory medium for storing a coordinates correction control program for controlling a coordinates correction apparatus which has a coordinate input means placed on a display, the program comprising:

code to control [the] display of a plurality of reference points on the display, the reference points indicating positions for user-designated coordinates on the coordinate input means;

code to receive coordinates designated for the plurality of displayed reference points by user via said coordinate input means;

code to calculate coordinates correction parameters for nonlinear conversion,

based on the received coordinates;

code to keep the calculated coordinates correction parameters for nonlinear conversion; and

code to correct the coordinates inputted in the coordinate input step by the nonlinear conversion using the kept coordinates correction parameters.